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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

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U.S. PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

In re Application of
FRAAS et al.

VIA FAX: 703-872-9306

Serial No. 08/835,419

Art Unit: 1764

Filed: April 9, 1997

Examiner: A. Doroshenk

For: PRETREATMENT PROCESS TO REMOVE OXYGEN FROM COAL EN ROUTE TO
A COAL PYROLYSIS PROCESS AS A MEANS OF IMPROVING THE QUALITY
OF THE HYDROCARBON LIQUID PRODUCT

REQUEST FOR REHEARING

To the Commissioner of Patents and Trademarks

Sir:

In response to the Decision of the Board of Patent Appeals
and Interferences (Board) mailed January 12, 2005, kindly
consider the following:

Applicant appreciates the reversal of the rejections of
claims 7, 17, 8, 18, 10, 20 and 21.

Reconsideration and reversal of the rejection of claims 1-4,
6, 9, 11-14, 16, 19, 22 and 23 under 35 U.S.C. 103(a) over Selep
(4,397,657) and Dospoy (5,743,924) are respectfully requested.

The Board tracks the Examiner's reasoning, for rejecting the
claims over Selep and Dospoy, particularly independent claims 1
and 11, and is in error for not following the mandate set forth

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by the Supreme Court in Graham v. John Deere Co., 148 USPQ 459, 467 (1966): "In considering the patentability of the present invention, ... the Board consider the invention as a whole, consider the scope and content of the prior art as a whole, consider the differences between the claims at issue and the prior art, and consider the level of ordinary skill in the art to which the invention pertains at the time the invention was made."

The rejections fail to consider the claimed invention as a whole and the prior art as a whole. Only selected features of the claimed invention have been discussed in the Decision, while other claimed features have been completely ignored and not even discussed in the entire Decision (see, for example, elements emphasized below).

Claim 1 describes a coal pyrolysis pretreatment apparatus comprising:

- * a pretreatment vessel for holding a bed of coal particles;
- * a preheater for heating the bed of coal particles to a temperature below the coal pyrolysis temperature range;
- * an enclosure around the vessel for preventing air from contacting the bed of coal particles;
- * an oxygen remover for removing the oxygen released from the heated coal particles and transporting it away from the enclosure so that the partial pressure of oxygen in the pretreatment region is kept low; and
- * a vibrating machine connected to the vessel for vibrating the vessel and providing rapid mixing and heating of coal particles entering the bed from the input to provide uniform removal of oxygen from coal particles. (emphasis supplied)

Claim 11 describes a coal pyrolysis pretreatment process comprising:

- * heating a bed of coal particles in a vessel to a temperature below the coal pyrolysis temperature range;
- * preventing air from contacting the bed of coal particles;
- * removing oxygen released from the heated coal particles from the enclosure before subjecting the coal to pyrolysis;
- * vibrating the vessel and providing rapid mixing and heating of coal particles entering the bed from an input to provide uniform removal of oxygen from coal particles. (emphasis supplied)

Selep describes:

- * passing coal from inlet 26 through two rotary gas locks prior to gasification;
- * Nitrogen is supplied to the inlet of the first rotary gas lock to prevent "oxygen-containing ambient air from entering first rotary lock" (col. 5, lines 14-15);
- * after the nitrogen purge, the transferring compartments of the second rotary gas lock are swept with product gas to exhaust "buffer gas from said material transferring compartments" (column 7, lines 11-12).

Selep has nothing to do with any enclosure for preventing air contact with the bed of coal surrounding the retorts or any other Selep device as claimed by the present invention. However, the Board has ignored this claimed feature completely.

Dospoy describes:

- * feeding coal from a bunker 10 equipped with a vibrating feeder 14 to a hammer mill 15 to a surge bin and weigh feeder 22;
- * it is then mixed with kraft cores from storage bunker 30 LDPE plastic and paper sludge, and dust from a cooler dust cyclone 46;
- * mixed product is flowed through a conditioning tank and metering screws into mill extruders, which make pellets

which are dried in ambient air and then transferred to a pellet bunker.

Dospoy provides a vibrating feeder which, at most (using the invention as a guide), may replace the inlet 26 of Selep. But, that has nothing to do with vibrating the vessel by a vibrating machine as uniquely claimed in claims 1 and 11. Nothing in the combined teachings of Dospoy and Selep inherently, or even remotely, provides for vibrating the retorts (the Board's discussion appears to treat the retorts as the claimed vessel). Any attempt to do so will harm the retort function of Selep. Citing In re Gordon, 221 USPQ, 1127, the court pointed out, "the mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification". In re Fritch, 23 USPQ2d 1783, 1784 (CAFC, August 1992). In the same case, In re Gordon, the court found a proposed modification inappropriate for an obviousness inquiry when the modification rendered the prior art reference inoperable for its intended purpose.

Nothing in either reference suggests vibrating the vessel and providing rapid mixing and heating of coal particles entering the bed from an input to provide uniform removal of oxygen from the coal particles, as specifically set forth in claims 1 and 11.

Claims 1 and 11 would not have been obvious from a combination of the references, because, as dictated by Graham v. John Deere Co., 148 USPQ 459, 467 (1966), when the invention (claims 1 and 11) is considered as a whole and when the prior art

is considered as a whole and the differences between the claims at issue and the prior art is considered, the prior art lacks the claimed features detailed above. Claims 1 and 11 are, therefore, patentable over Selep and Dospoy. It follows that all the dependent claims are also non-obvious over the references.

None of the claims would have been obvious from a combination of Selep and Dospoy. Nothing inherent in Selep and Dospoy suggests a combination that would result in the claimed invention.

CONCLUSION

Reversal of the Examiner and allowance of all the claims are respectfully requested.

Respectfully,



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